

Quick Facts

About... *E. coli*

What is *E. coli*?

Escherichia coli (esh-uh-rik-ee-uh koh-lie) is a bacterium that lives in the intestines of most healthy warm-blooded animals, including humans. There are hundreds of strains of *E. coli*, and most are harmless. However, several types of *E. coli*, such as O157, and other Shiga-toxin producing strains, can cause severe and contagious illness in humans. On average, 90 cases of *E. coli* are reported in Indiana every year.

How is *E. coli* spread?

E. coli is passed in the stool, and people become infected by ingesting feces from an infected animal or person (fecal-oral route).

There are many ways to become infected with *E. coli*:

- Eating contaminated foods:
 - Undercooked beef products, particularly ground beef.
 - Drinking unpasteurized milk and fruit juices, including apple cider.
 - Unwashed raw fruits, vegetables, or herbs that have been contaminated by feces, raw meats, fertilizers, or untreated water.
- Swallowing untreated water, e.g., from lakes or streams.
- Having direct contact with the stool of infected cattle, livestock, and animals at petting zoos.
- Having contact with an infected person's stool:
 - Not washing hands after contact with stool from a contaminated surface or diaper/linen and ingesting the bacteria.

- Having sex that involves contact with stool.

The most common sources of *E. coli* outbreaks are inadequately cooked hamburgers, produce (such as melons, lettuce, spinach, coleslaw, apple cider, and alfalfa sprouts), and unpasteurized dairy milk. Persons who work in certain occupations, such as food handlers, day care providers, and health care providers, have a greater risk of transmitting infection to others.

What are the symptoms of *E. coli* infection?

- Bloody or non-bloody diarrhea
- Abdominal cramps
- Little or no fever
- Nausea
- Vomiting

Symptoms usually begin 3-4 days (range of 2-10 days) after exposure and last for approximately 5-10 days. Some people may only have mild diarrhea without blood or no symptoms at all. An infected person can pass the bacteria in their stool for up to 3 weeks after their symptoms have stopped.

Approximately 8% of people infected with *E. coli* (O157 and other Shiga-toxin producing strains) can develop a condition called hemolytic uremic syndrome (HUS). This condition is very serious and can lead to kidney failure and death. Children under 5 years of age and the elderly are more likely to develop this condition.

How do I know if I have *E. coli* infection?

A person having diarrhea lasting longer than 24 hours or having bloody stool should immediately consult a health care provider. The health care provider may collect a stool, urine, or blood sample to test for *E. coli*.

How is *E. coli* infection treated?

Most people recover without medical treatment. The use of antibiotics or over-the-counter antidiarrheal agents is not recommended; the use of these can lead to greater likelihood of developing HUS. Serious infections that affect the kidneys will require hospitalization and extensive medical care.

Is *E. coli* infection a reportable disease?

Yes. Health care providers or laboratories must immediately report cases of *E. coli* infection to the local health department (LHD) or the Indiana State Department of Health (ISDH). The LHD will contact all cases diagnosed with diarrhea-producing *E. coli* infection so a possible exposure can be determined to help prevent others from becoming ill.

How can *E. coli* infection be prevented?

In general, *E. coli* infection can be prevented by strictly adhering to the following guidelines:

- Practice good hygiene:
 - Thoroughly wash hands with soap and water after using the restroom; after assisting someone with diarrhea and/or vomiting; after contact with animals and reptiles; after swimming; before, during, and after food preparation; and after exposure to raw meat products (please refer to Quick Facts about Hand Washing).
 - Clean food preparation work surfaces, equipment, and utensils with soap and water before, during, and after food preparation, especially after contamination with raw meat products.
- Separate raw and cooked foods:
 - Avoid cross-contamination by keeping uncooked meat products separate from produce, ready-to-eat foods, and cooked foods.
 - Use separate equipment and utensils for handling raw foods, especially for marinades or barbeque sauce.
 - Clean food-preparation work surfaces and utensils with soap and water before, during, and after food preparation, especially after contact with raw meat products.
- Maintain safe food temperatures:
 - Ensure proper temperatures are maintained during refrigeration (<40°F), freezing (<2°F), holding (keep food hot or at room temperature for no longer than 2 hours), and chilling (chill immediately and separate into smaller containers if needed).
 - Thoroughly cook all food items to USDA recommended safe minimum internal temperatures:
 - 145°F – steaks and roasts
 - 160°F – pork and ground beef (should not be eaten pink)
- Eat safe foods (Remember: Contaminated foods may look and smell normal):
 - Do not eat undercooked meat.
 - Do not eat foods past the expiration date.
 - Do not eat unpasteurized dairy products and fruit juices, including apple cider; it is illegal to sell unpasteurized dairy products in Indiana.

- Wash all produce before eating raw or cooking.
 - Use treated water for washing, cooking, and drinking.
- Handle animals safely:
 - Wash hands after contact with livestock, petting zoos, pets, especially if they are suffering from diarrhea.
- Protect others:
 - Persons with diarrhea and/or vomiting should not prepare food or provide health care for others and should limit direct contact with others as much as possible.
 - Persons with diarrhea and/or vomiting should not attend a day care facility or school.
 - Persons with diarrhea and/or vomiting shall be excluded from employment involving food handling (Indiana Retail Food Establishment Sanitation Requirements, 410 IAC 7-24-122).

Where can I learn more about *E. coli*?

To search Indiana data and statistics:

<http://www.in.gov/isdh/18888.htm>

To search the Indiana Food Protection Program:

<http://www.in.gov/isdh/20640.htm>

To search disease information:

<http://www.cdc.gov/ecoli/>

<http://www.cfsan.fda.gov/~mow/chap15.html>

To search for national data, statistics, and outbreaks:

www.cdc.gov/mmwr/

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